NEW SPECIES OF *MEXISPHODRUS* FROM MEXICAN CAVES (COLEOPTERA: CARABIDAE)[1]

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The first true sphodrine known from North America was collected in a cave in Veracruz, Mexico, in 1964. I described it as *Mexisphodrus veraecrucis* (Barr, 1965), emphasizing the sharply truncate, triangular base of the prosternum, which appears to be the most reliable sphodrine character. Straneo (1957) had previously assigned another interesting anchomenine genus, *Bolivaridius* Straneo, to the true sphodrines because of a superficial resemblance to *Sphodropsis* Seidlitz, but *Bolivaridius* lacks the characteristic prosternal feature so clearly exhibited in *Mexisphodrus* and the Palearctic sphodrines, and in my opinion does not belong in this group.

Mr. James R. Reddell and the members of the Association for Mexican Cave Studies have recently sent me additional specimens referable to *Mexisphodrus,* rather obviously specifically distinct from *M. veraecrucis.* These insects were collected in deep pits in San Luis Potosi and Tamaulipas, respectively. I am indebted to Mr. Reddell and to Messrs. David McKenzie, John Fish, L. E. Gilbert, and Orion Knox for this unusual material. Holotypes of both species are deposited in the Museum of Comparative Zoology, Harvard University.

Mexisphodrus tlamayaensis Barr, new species

Distinguished from *M. veraecrucis* Barr by smaller size, larger eyes, presence of functional wings, and other features. Length 11.3 mm. Head and pronotum rufocastaneous, shining; elytra darker castaneous, slightly iridescent, shining, polished; elytral disc with microsculpture finely transverse. *Head* as wide as long, not including outstretched mandibles; greatest width across eyes; eye diameter a little more than length of scape, eyes pale, very convex; antenna 3/5 the total body length. *Pronotum* 7/8 as long as wide, width of apex and width of base subequal and about 3/4 the maximum width, which occurs at apical 1/3; anterior angles prominent; hind angles large and slightly obtuse, rather blunt; margin broadly re-

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flexed; sides rounded, shallowly sinuate in basal 1/5; basal fossae broad with gentle lateral slopes but with impressed line at bottom. *Elytra* 1 1/2 times as long as wide, elongate-oval; apices conspicuously sinuate, individually finely but distinctly truncate; striae regular and distinctly impressed, intervals subconvex; 3rd interval with 3 discal punctures, anterior against 3rd stria, middle and posterior against 2nd stria; functional metathoracic wings present. *Aedeagus* elongate, slender, 2.25 mm (about 1/5 the total body length) in holotype, very similar in form to that of *M. veraecrucis* but smaller; median lobe narrowly keeled ventrally and anterior to apex; parameres conchoid, right slightly smaller and apically more pointed than left; internal sac completely folded, bearing several dense patches of small scales.

Holotype male (a unique), Sótano de Tlamaya, near village of Tlamaya, municipality of Xilitla, San Luis Potosi, Mexico, 30 January 1966, John Fish leg.

This species is obviously less conspicuously "spelean" in appearance than *M. veraecrucis* or the species described below. The type cave, Sótano de Tlamaya, is the deepest known cave in the western hemisphere, with a total depth of 1354 feet. It is entered through pits at the south edge of the Tlamaya doline. Bell and Raines (1965) have recently described the cave and given an account of its exploration.

Mexisphodrus profundus Barr, new species

Similar to *M. veraecrucis* in the small eyes, elongate pronotum, uniform color, and vestigial metathoracic wings, but distinguished by the smaller size, smaller aedeagus, the rounded elytral apices, and the finely transverse microsculpture of the elytral disc. Length 12.1-12.9 mm. Reddish-ferrugineous, shining; elytra polished-shining, the microsculpture finely transverse, the meshwork slightly denser than in *M. tlamayaensis* and less noticeably iridescent. *Head* as wide as long, not including the outstretched mandibles; greatest width across the eyes; eye diameter about 2/3 length of scape; antenna 2/3 the total body length. *Pronotum* a little more than 9/10 as long as wide, width of apex and width of base subequal and about 4/5 the maximum width, which occurs at apical 1/3; anterior angles very prominent; hind angles large, sharp, very slightly more than right; margin broadly reflexed; sides feebly rounded, sinuate at basal 1/5, then subparallel to the hind angles; basal fossae broad and deep. *Elytra* 1.9 times as long as wide, elongate-elliptic; apices sinuate and individually narrowly rounded; striae moderately impressed and reg-

ular, intervals subconvex; intervals without discal punctures; metathoracic wings vestigial. *Aedeagus* about as in *M. tlamayaensis,* 2.12 mm in holotype.

Holotype male, Sótano de la Joya de Salas, 25 km west of Encino, elevation 1600 meters, Tamaulipas, Mexico, 3 June 1965, David McKenzie, John Fish, and Orion Knox leg. Three paratypes from the same cave, two on 3 June and one taken 23 January 1965 by D. McKenzie. A fourth paratype, "30 ft. down in sinkhole", Rancho del Cielo, 6 km NW Gomez Farias, Tamaulipas, 1 July 1965, L. E. Gilbert.

Like *M. veraecrucis,* this species seems to be an incipient troglobite, with an elongate body, very small eyes, and vestigial metathoracic wings. Mr. James R. Reddell provided the following information: "The three *Mexisphodrus* were found in the same vicinity of the first specimen — within a well-illuminated area of about 4 square yards on the floor of the entrance shaft. Decaying animal carcasses were near-by. This was also a very wet portion of the rocky floor area, which was 20 feet by 75 feet. All of the beetles had apparently burrowed to positions beneath shoe-sized rocks partially embedded in mud. When uncovered and disturbed they ran rather rapidly. The dry season may be limiting their activity in this locale; the area is well ventilated and subject to drying. But none were discovered in the moist lower portions of the cave where other troglobites were common."

TABLE 1

MEXISPHODRUS SPP., HOLOTYPES,
COMPARATIVE MEASUREMENTS (Millimeters)

	M. veraecrucis Barr	*M. tlamayaensis* n. sp.	*M. profundus* n. sp.
Total length	18.1	11.3	12.1
Head length	3.2	2.1	2.1
Head width	2.0	2.1	2.1
Antenna	10.6	6.8	8.0
Eye diameter	0.6	0.7	0.4
Pronotum length	3.4	2.1	2.3
Pronotum max. width	3.4	2.4	2.5
Pronotum apex width	2.4	1.8	2.0
Pronotum base width	2.8	1.8	1.9
Elytra length	10.0	6.1	7.0
Elytra width	5.5	4.0	3.7
Aedeagus	3.3	2.2	2.1

Comparative measurements of the holotypes of the three known species of *Mexisphodrus* are given in the accompanying table. The three species may be separated by the following key.

Key to Known Species of *Mexisphodrus*

1 Eyes small and flat, their diameter less than length of scape; pronotum elongate, the sides only feebly rounded; color uniformly rufotestaceous or ferrugineous; metathoracic wings vestigial 2

Eyes large and convex, their diameter greater than length of scape; pronotum distinctly wider than long, sides conspicuously rounded; head and pronotum rufocastaneous, elytra darker, shining; metathoracic wings functional; San Luis Potosi ..... *M. tlamayaensis* Barr, n. sp.

2 Size larger (16-18 mm); aedeagus larger (3.3 mm); apices of elytra individually acuminate, dehiscent; elytral disc dull shining, microsculpture rather coarsely isodiametric, granular; Veracruz ..... *M. veraecrucis* Barr

Size smaller (12-13 mm); aedeagus smaller (2.1 mm); apices of elytra individually rounded; elytral disc polished shining, microsculpture a transverse meshwork; Tamaulipas ..... *M. profundus* Barr n. sp.

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